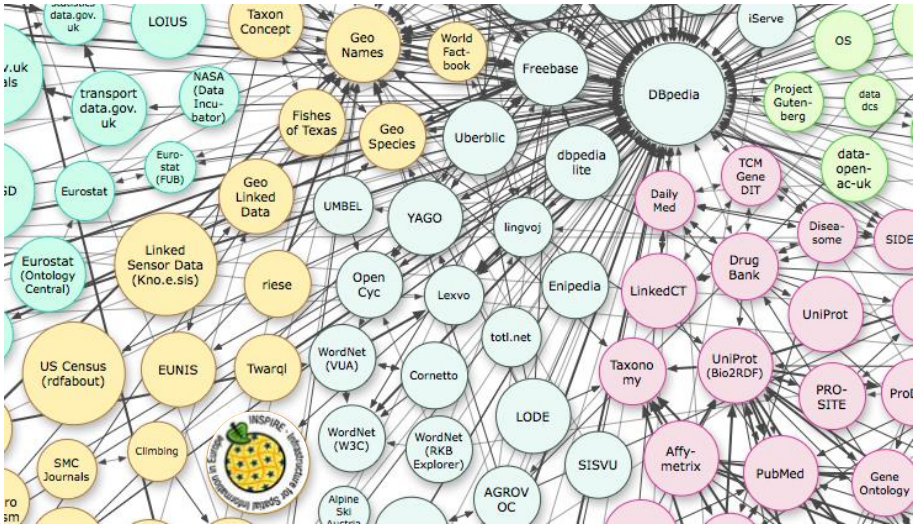
RDF – an alternative encoding for INSPIRE data?

Michael Lutz

Geodata on the Web Conference

Amersfoort, 10 February 2016



www.jrc.ec.europa.eu

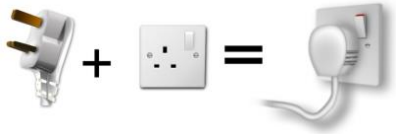
Serving society
Stimulating innovation
Supporting legislation

Content

- INSPIRE in a nutshell
- Why another encoding?
- The ARE3NA RDF guidelines and pilots

INSPIRE in a nutshell

- INSPIRE provides a comprehensive framework for interoperability of spatial data
  - Inventory (monitoring of implementation)
  - data & service sharing
  - data & service discovery (metadata)
  - network services
  - data interoperability



- INSPIRE data can be combined with other data to enable cross-sector & cross-border "location-aware" analyses

Key pillars of data interoperability

Conceptual data models

- spatial objects and their properties and relationships for 34 data themes
- cross-domain harmonization
- based on a common modelling framework
- managed in a common UML repository

Encoding

- GML application schemas as standard encoding
- conceptual models independent of concrete encodings
- also possible to derive other encodings (e.g. based on RDF)

Harmonised vocabularies

- to overcome interoperability issues caused by free-text and/or multi-lingual content
- allow more specific terms from local vocabularies in addition to the harmonized terms

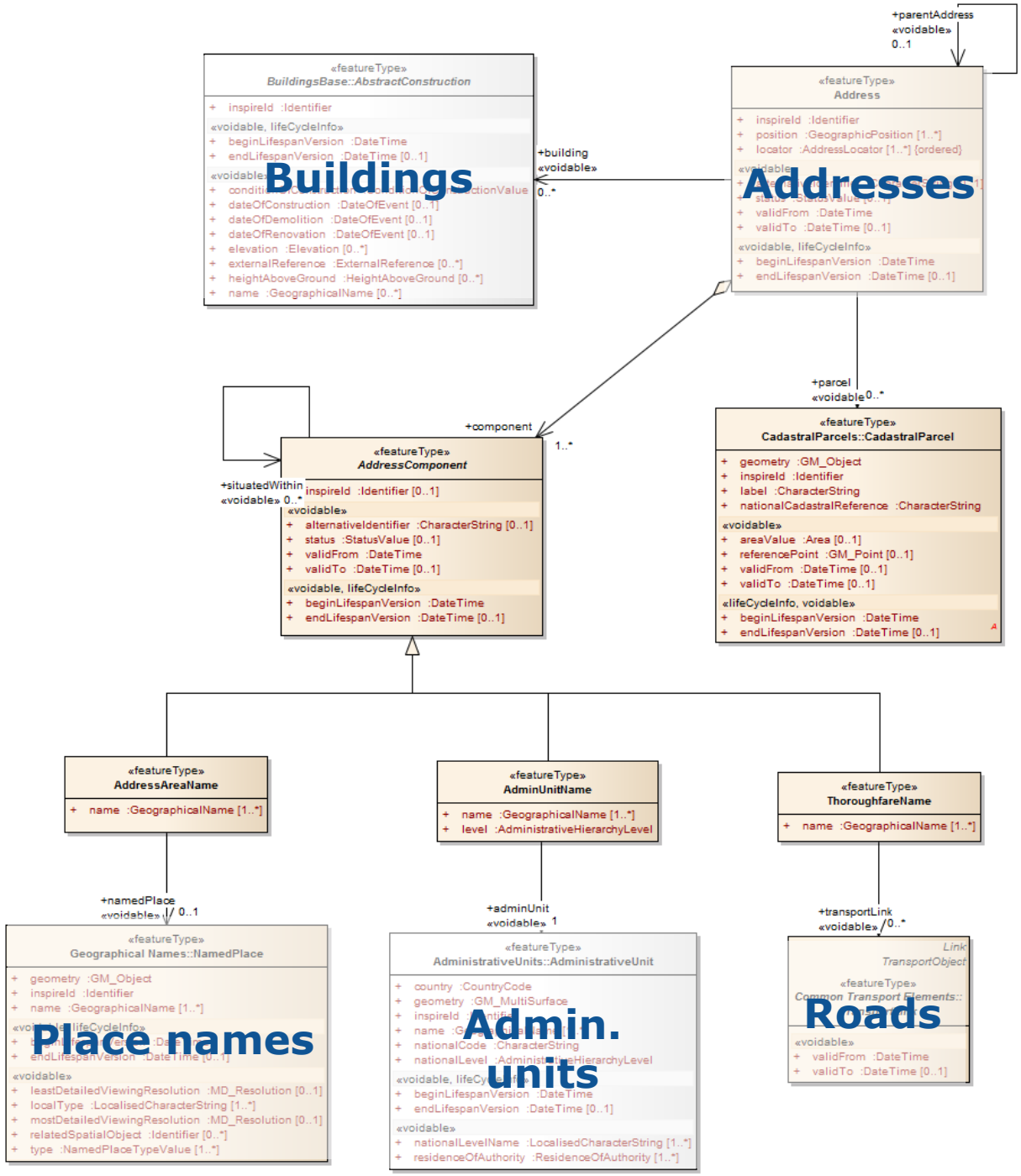
Registers

- provide unique and persistent identifiers for resources
- allow their consistent management and versioning
- items can be made unique and referred to unambiguously

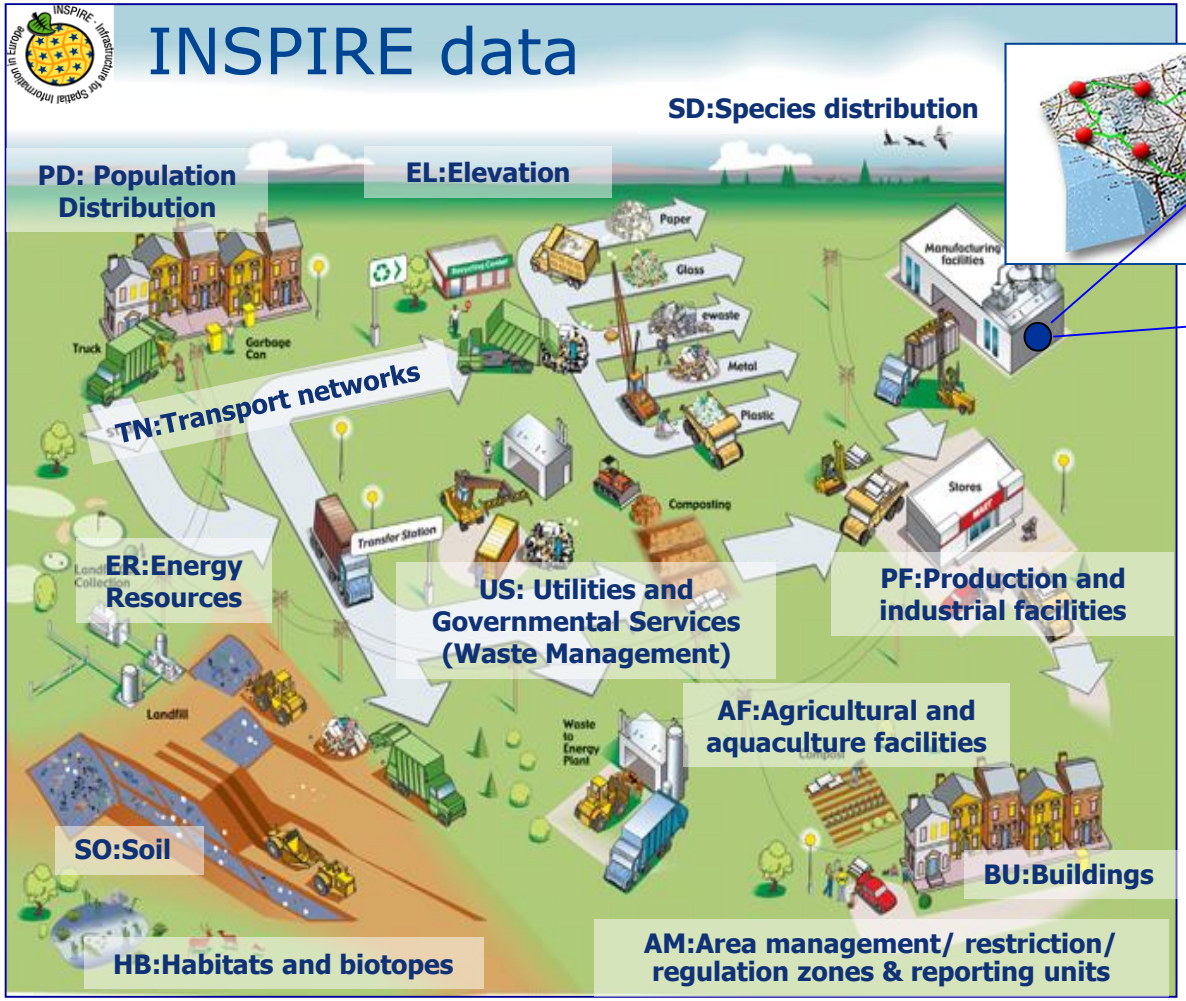
Data models

Conceptual data models

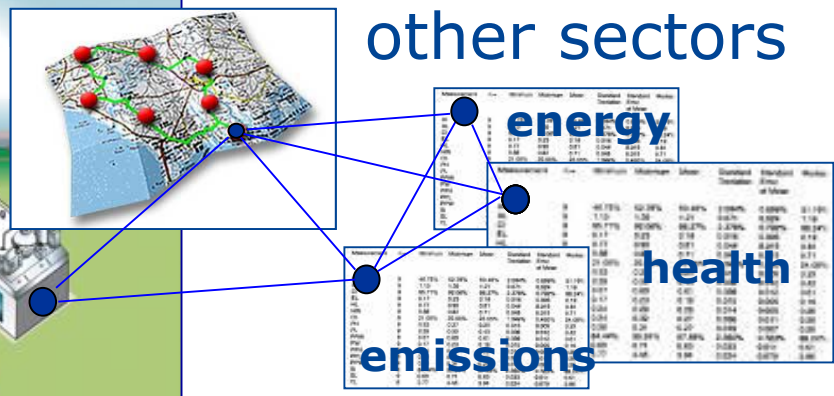
- spatial objects and their properties and relationships for 34 data themes
- cross-domain harmonization
- based on a common modelling framework
- managed in a common UML repository



Cross-sector/-border interoperability



Data from other sectors



Smart cities

Environmental Impact Assessment

Risk Management

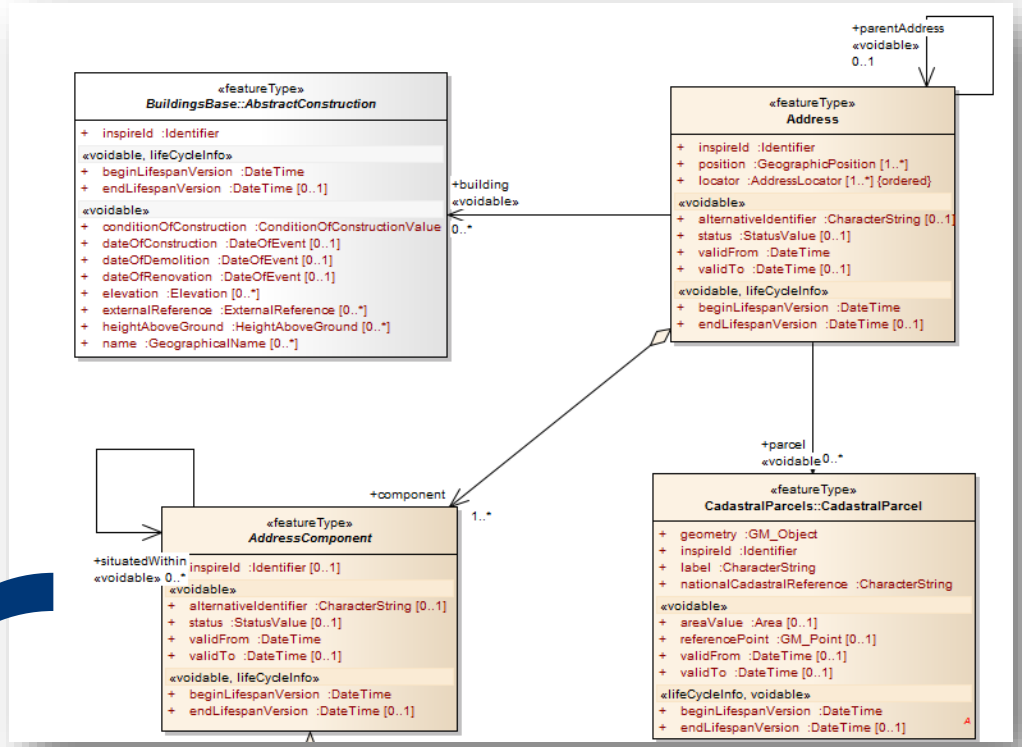
...

Joint Research Centre

Encoding rules

Encoding

- GML application schemas as standard encoding
- conceptual models independent of concrete encodings
- also possible to derive other encodings (e.g. based on RDF)



European Commission

Action 1.17

isa

ARe³NA

A Reusable INSPIRE Reference Platform

Interoperability

open source

Openness

Reuse

Collaboration

… sharing reusable components for **INSPIRE** implementation and interoperability in cross-border/cross-sector contexts

Joint Research Centre

ARE3NA work on INSPIRE as Linked Data

Objectives

- Improve the guidelines for publishing INSPIRE data in RDF
- Elaborate the value propositions of geospatial data as linked open data

2 Pilots

Guidelines

Draft **methodology** and **vocabularies** for refinement of the guidelines

Feasibility and benefits of representing INSPIRE in RDF

Document **issues** related to methodology and vocabularies

Update guidelines following results of the pilots

Pilots – Tell us more about …

Tools: Are you planning to use existing software tools for the implementation of the pilot that other organisations could use in similar activities?

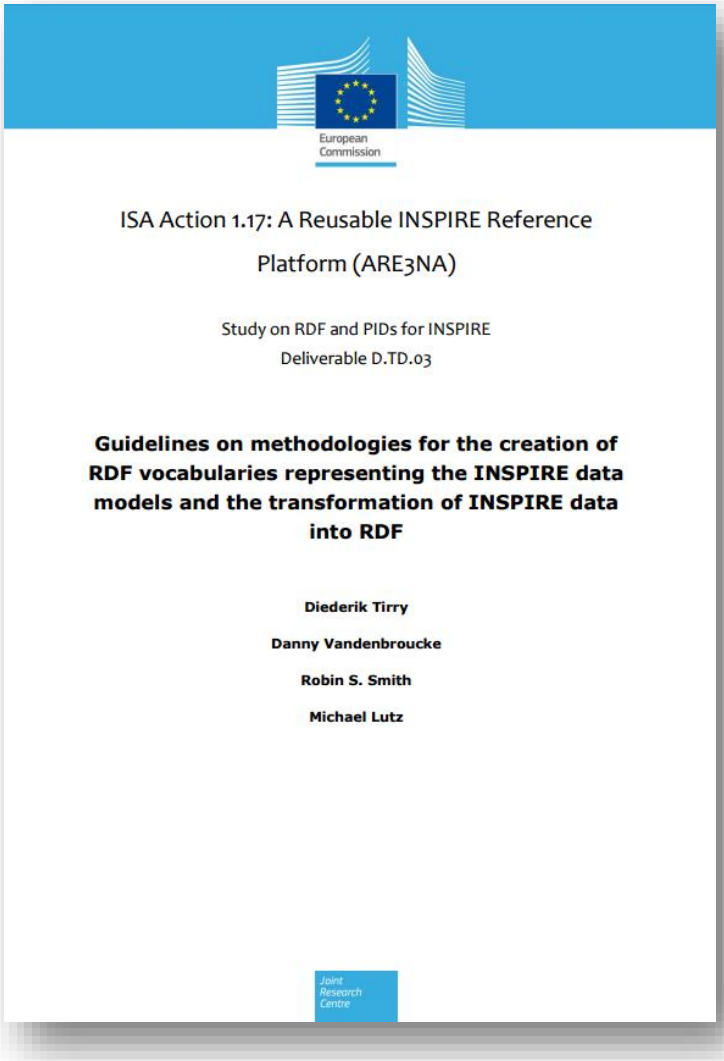
Data: Are you planning to reuse existing vocabularies? Which INSPIRE data would the pilot use? Are there any access or licensing restrictions to the data?

Use cases: Which problems will the pilot address? What is the policy context? Which challenges do you foresee? Who is your target audience? What added value would the pilot bring?

Data consumers: What are the benefits of using RDF/Linked Data for the consumers? What are their specific data requirements? Which other parties would be involved in the pilot?

Guidelines

- Build on the results of a previous ARE3NA project (2014)
- Focus on open issues
- Consider new input
- Goal is a draft for a new encoding rule for INSPIRE data, ready for stakeholder review
- Scope focused on themes used in pilots


European Commission

ISA Action 1.17: A Reusable INSPIRE Reference Platform (ARE3NA)

Study on RDF and PIDs for INSPIRE
Deliverable D.TD.03

Guidelines on methodologies for the creation of RDF vocabularies representing the INSPIRE data models and the transformation of INSPIRE data into RDF

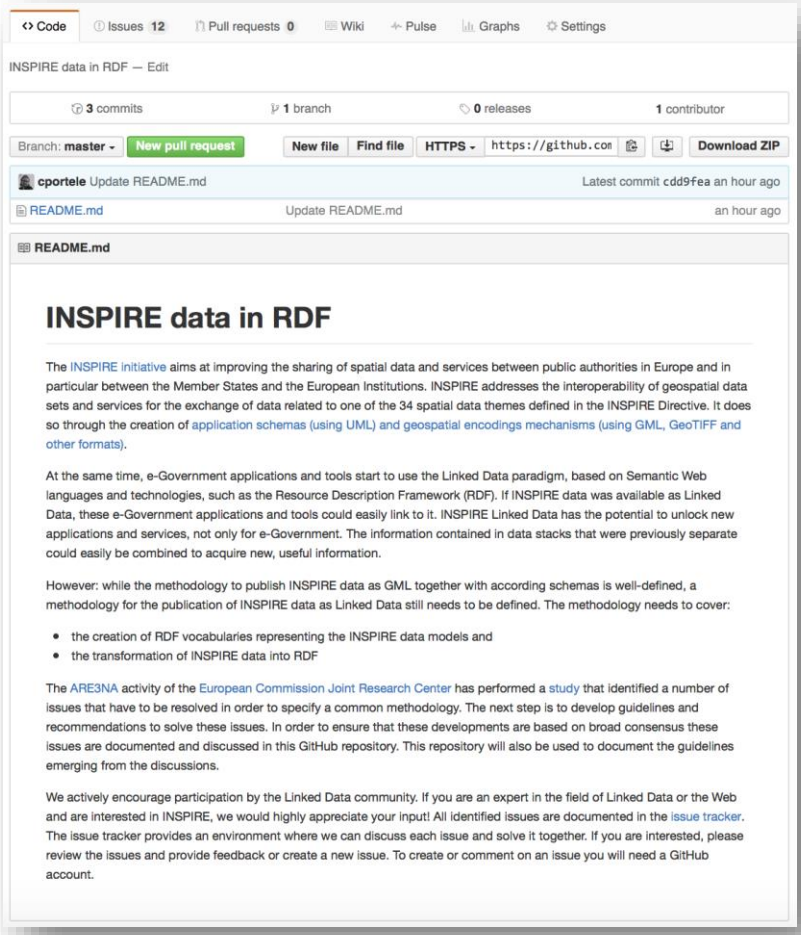
Diederik Tirry
Danny Vandenbroucke
Robin S. Smith
Michael Lutz

Joint Research Centre

https://joinup.ec.europa.eu/sites/default/files/are3na-rdf_vocabulary_guidelines_final.pdf

Feedback on open issues on GitHub

- GitHub repository for discussing and resolving open issues
- Starting point: known open issues incl. a proposal for resolution
- Comments and ideas from stakeholders and experts working on related activities welcome!
- Also the emerging guidelines and proposed INSPIRE RDF vocabularies will be documented in the repository



https://github.com/inspire-eu-rdf/inspire-rdf-guidelines

Timeline

- **Inception** activity (01-04/2016): definition of the forum, pilot selection
- **Pilot** activity (03-10/2016): scoping, support pilot participants and monitoring
- **Guideline** activity: document known open issues on GitHub (01-02/2016), resolve open issues, create and test RDF vocabularies in pilots, document guidelines, engage with experts and stakeholders (02-12/2016), test INSPIRE as Linked Data in Pilots (02-09/2016), Review of draft guidelines by INSPIRE MIG (02-05/2017)
- **Use Case** activity (03-12/2016): use case identification
- **Review** (03-06/2017): advice to JRC to help resolve any comment obtained

Get involved!

- Propose pilots

- Comment on GitHub

- Connect to your MIG-T representative

- Send feedback on “food for thought” to are3na@jrc.ec.europa.eu
  (or talk to us during the lunch break)

Food for thought…

- Do we really need this?
- Do we need it for all of INSPIRE?
- Where do the real benefits lie (for whom)?
- Do we need to change our SOA architecture?